REMARKS

Claims 1, 2, and 4-20 were pending in the application. The final office action dated December 20, 2007 rejects all pending claims.

This paper amends claims 1, 4-6, 8, 11-13, 18, and 20, cancels claims 17 and 19, and adds claims 21-23. Applicant is not conceding that the subject matter encompassed by claims 1, 4-6, 8, 11-13, and 17-20 prior to this Amendment is not patentable over the art cited by the Examiner. Claims 1, 4-6, 11-13, 18, and 20 were amended and claims 17 and 19 were canceled in this Amendment to facilitate expeditious prosecution of the application. Applicant respectfully reserves the right to pursue claims, including the subject matter encompassed by claims 1, 4-6, 8, 11-13, and 17-20 as presented prior to this Amendment and additional claims in one or more continuing applications.

Claims 1, 2, 4-16, 18, and 20-23 are now pending in the application.

Provisional Double Patenting Rejection

The Office Action provisionally rejects claims 1-2 and 4-20 on the ground of non-statutory obviousness-type double patenting as being unpatentable over claims 1-20 of co-pending Application No. 10/678,812. Accompanying this paper is a terminal disclaimer to overcome the provisional double patenting rejection.

Claim Rejections under 35 U.S.C. § 103

The Office Action rejects claims 1-2, 4-10, and 20 under 35 U.S.C. 103(a) as being unpatentable over Chi et al. (U.S. Patent No. 6,654,341). Applicant respectfully traverses the rejection.

Independent claim 1 of the applicant's invention now recites a method of communicating information between cards of a network element in addition to data traffic being forwarded between the cards. A first out-of-band signal containing information is transmitted from a first card in the network element to a second card in the network element over a link. The link carries the first out-of-band signal between the first card and the second card by a different path from a path used to forward data traffic between the first and second cards. Out-of-band signals are received by the second card in the network element from a plurality of other cards in the network element. Information extracted from the out-of-band signals received from the plurality of other cards in the network element is incorporated into a second out-of-band signal. The second out-of-band signal is transmitted by the second card in the network element to the first card in the network element over the link.

Chi discloses a method for distributing protection line identification and availability information among switches in a SONET ring network. Applicant respectfully maintains its argument that Chi does not use out-of-band signaling in the ordinary meaning of the term (and as defined by the applicant's specification) to distribute this protection line information. Notwithstanding, claim 1 of the applicant's invention has been amended to illustrate more clearly that out-of-band signals are transmitted separately from data traffic (i.e., out-of-band signals are carried between the first and second cards by a different path from the path taken by data traffic). In contrast, Chi teaches distributing the protection line information with the SONET traffic stream by incorporating the information in the K-byte of the SONET overhead. Thus, data traffic in Chi takes the same path as the protection line information (i.e., protection line information and data traffic do not traverse different paths between cards). Therefore, Chi cannot teach or suggest the applicant's claimed link that is "carries the first out-of-band signal between the first card and the second card by a different path from a path used to forward data traffic between the first and second cards", as now set forth in the applicant's claimed invention.

Moreover, even if, *arguendo*, Chi can be considered to teach out-of-band signaling, Chi does not transmit such "out-of-band" signaling between cards in a network element. As now claimed, the applicant's invention includes "transmitting a first out-of-band signal ... from a first card *in the network element* to a second card *in the network element* over a link" and "transmitting, by the second card *in the network element* to the first card *in the network element*, a second out-of-band signal over the link". In contrast, Chi's distribution of information occurs over a ring network among switches (i.e., multiple network elements), not between cards within a single switch. Hence, Chi also does not teach or suggest a link that carries out-of-band signals between cards *in a network element*, as now set forth in the applicant's claimed invention. In view of the foregoing, applicant respectfully requests that the rejection be withdrawn.

Independent claim 20 recites language similar to that recited in claim 1, and is therefore patentable for at least those reasons cited in connection with claim 1. For instance, the preamble of claim 20 is directed to a network element. The network element has a first link on the backplane for carrying data traffic between the tributary and the cross-connect cards in the network element, and a second link (different from the first link) for carrying out-of-band signals between the tributary card and the cross-connect card by a different path from a path used to carry the data traffic. The tributary card transmits information to the cross-connect card in a first out-of-band signal over the second link and the cross-connect card transmits information received from other cards in the network element to the first card over the second link in a second out-of-band signal.

With respect to the dependent claims, each depends directly or indirectly from patentable independent claim 1 and incorporates all of its limitations and, therefore, is patentable for at least this reason.

Claim Rejections under 35 U.S.C. § 102

The Office Action rejects claims 11-17 under 35 U.S.C. § 102(b) as being anticipated by Iacovino et al. (U.S. Publication No. 2004/0085954). Applicant respectfully traverses the rejection.

Independent claim 11 of the applicant's invention now recites a method of communicating information between cards of a network element. An incoming data signal having payload is received at a first card in a network element from over a network. Information is obtained from the incoming data signal. The payload is forwarded to a second card in the network element at a frame rate used for synchronous data transmission of optical signals. A first out-of-band signal containing information is transmitted at the frame rate from the first card to the second card over a bidirectional link. The bidirectional link carries the first out-of-band signal between the first and second cards by a different path from a path taken by the forwarded payload. A second out-of-band signal is transmitted at the frame rate over the bidirectional link from the second card to the first card. The second out-of-band signal contains information extracted from out-of-band signals received by the second card from a plurality of other cards in the network element.

Iacovino teaches out-of-band signaling from a line module (520) to a switch module (550). The line module sends out-of-band signals to the switch module over a dedicated proprietary channel (770) in parallel with the traffic flow. The traffic flow comprises STS-48 signals. In contrast to the applicant's invention, Iacovino's flow of out-of-band signaling is unidirectional: from the line module to the switch module. (FIG. 6 and FIG. 7 both show a unidirectional arrow from the line modules to the switch module to illustrate the out-of-band communication link.) In response to the out-of-band signal from a line module, Iacovino's switch module selects the best STS-1 from among the protect/working pair and sends an STS-48 sized payload back to the line module. (paragraph [0052]]. However, when the switch module sends this STS payload back to the line module, the switch module does not use out-of-band signaling - by implication, transmission of the STS (data) traffic stream from the switch module to the line module occurs in-band (paragraph [0049]). Therefore, Iacovino does not teach or suggest the applicant's claimed bi-directional link over which a first out-of-band signal is transmitted from the first card to the second card and a second out-of-band signal is transmitted from the second card to the first card, as now set forth in the applicant's claimed invention. Therefore, applicant respectfully requests that the rejection be withdrawn.

With respect to the dependent claims, each depends directly or indirectly from patentable independent claim 11 and incorporates all of its limitations and, therefore, is patentable for at least this reason.

Rejection of Claim 19 under 35 U.S.C. § 103

The Office Action also rejects claims 19 under 35 U.S.C. 103(a) as being unpatentable over Iacovino in view of Chi. In view of the cancellation of claim 19, applicant submits that this rejection is moot.

CONCLUSION

Applicant submits that this paper provides a response for all pending claims. Any absence of a reply to a specific rejection, issue, or comment, or to the taking of "official notice" or reliance on "common sense", however, does not signify agreement with or concession of that rejection, issue, comment, taking of "official notice", or reliance on "common sense". In addition, because the arguments made above are not exhaustive, there may be reasons for patentability of any or all pending claims that have not been expressed.

In view of the amendments and arguments made herein, applicant submits that the application is in condition for allowance and requests early favorable action by the Examiner.

If the Examiner believes that a telephone conversation with the applicant's representative would expedite allowance of this application, the Examiner is cordially invited to call the undersigned at (508) 303-0932.

Respectfully submitted,

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